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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 259

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FRANCE

UK, U.S. COMPUTER FIRMS MAP PLANS FOR LOCAL EXPANSION

Perth THE WEST AUSTRALIAN in English 10 Nov 82 p 64

[Text] **TWO companies have announced plans that will result in the further expansion of Australia's growing computer industry.**

The U.K.-based computer manufacturer, ICL Computers, has begun manufacturing computer terminals in Australia. In the next 12 months the company intends to produce 500 video display units in a newly-opened manufacturing area adjoining the company's shipping and distribution warehouse in Mascot, NSW.

Display units being manufactured are models 3484, 3485 and 3573, which are used with ICL's networked Product Line range of computers.

At around 10 terminals a week that is not exactly big business.

However, it is a start and the Asia-Pacific region is being examined as a possible export market.

Mr Neil Lamming, managing director of ICL Australia, said it was the first time that ICL or its predecessors had manufactured equipment in Australia.

"It reflects the growing international outlook of the ICL group," he said.

"We have a well-motivated, highly-skilled labour force and now that these three models of terminals are being manufactured, we will examine the possibility of manufacturing other products in Australia.

"A major advantage of manufacturing here is that we will be able to reduce our costs and offer even more competitively priced products to our customers."

The second company is U.S.-based Wyse Technology, which has signed an agreement with Microprocessor Applications Pty Ltd to assemble the Wy-100 intelligent terminal in MPA's new Box Hill facilities in Melbourne.

MPA has established full assembly facilities in its new premises, including a heat test room, in which completed terminals are burnt in at temperatures of 40C for two days before shipping.

"This is a logical step for MPA, which has been manufacturing its own microcomputer, the Option II, since earlier this year," Mr Terry Gray, managing director of MPA said.

Microprocessor Applications has been designing and manufacturing a range of industrial and commercial specialist monitoring systems since it was formed five years ago, and is also the Australian distributor of the Micromation range of computers.

"The Wy-100 terminal, which was released in the U.S. in June, has been described as "the-state-of-the-art" terminal by U.S. computer reviewers," Mr Gray said.

CSO: 5500/7522

COMPUTER EXPERT ADDS TO CRITICISM OF NATION'S HIGH-TECH

Melbourne THE AGE in English 16 Nov 82 p 36

[Article by Graeme Domm]

[Text] Australia's performance in developing high technology capabilities is "abysmal", according to one of the pioneers of the Australian computer industry, Mr David Hartley.

Mr Hartley, founder of Brisbane-based Hartley Computer, says Australia is "at the bottom of the scale of so-called developed countries" in terms of technology imports versus exports.

Mr Hartley's company has fallen on hard times this year, and has been in receivership since May, but it has not dimmed his enthusiasm for local development.

In a paper published in this month's Australian Computer Society bulletin, Mr Hartley attributes much of the company's difficulty to the problems of being tied to overseas whims, and a "technological cringe" shown in favor of foreign technology.

Outlining Australia's "abysmal" performance, Mr Hartley said Australia imported $14 worth of technology for every $1 it exported.

"And those dollars are not small--$1.4 billion in the office equipment and telecommunications field during the first 11 months of 1981-82, up 23 percent on the previous year," he said.

"At this rate high technology improts will soon become our biggest import item, passing oil."

Mr Hartley listed reasons for Australia's lack of initiative in developing native technology--all of which could be overcome with sufficient will.

Top of the list was the "technological cringe", an attitude summarised by Federal MP Barry Jones, when he said: "Australians either think they can't compete if it is being done in the USA or Japan or, if it isn't then it can't be any bloody good."

The attitude was absurd, yet still it persisted, Mr Hartley said.

Australia had been a world leader in computer research in the early 1950s, but nothing had been done to capitalise on the possibilities.

One of Australia's computing pioneers, C. B. Hamblin, ranked among the foremost computer architects of all time. "(But) the Government directed that CSIRO research funds be switched from computers to cloud seeding experiments that just recently, after 30 years, have been put on hold," Mr Hartley said.

"World class development" in chip design has resumed in Adelaide with the CSIRO, but few local companies had shown any interest.

Australian computer companies such as CMAD, Webster Electronics, ERA, Electronic Control Systems and Digital Electronics had proved that local companies could achieve technological leadership in selected product areas. "The ability is not the problem--the cringe is," he said.

A second argument against local production was the suggestion that the Australian market was too small for economies of scale to operate.

Total spending on data processing products and services in Australia was about $2 billion a year, or about half that of the motor industry, and growing much faster at a rate of between 20 and 30 percent a year.

Mr Hartley quoted a U.S. Department of Commerce market research survey which suggested that the "business equipment and systems market could be the biggest single growth market in Australia in the 1980s....local production of these products will remain insignificant".

Mr Hartley said such items did not suggest a small market. "Apparently we are able to support a large-scale motor vehicle manufacture (or rather it is deemed that we should subsidise motor vehicle manufacture) whereas the much less capital intensive (and) higher job generating...computer manufacturing area is neglected."

The computer industry also offered excellent export opportunities, as his own company had demonstrated. "The products are of high value relative to size and weight, so the Australian distances are less significant," he said.

Mr Hartley rejected the suggestion that Australian companies should concentrate on writing programs and leave development of hardware to overseas countries. (Hartley's move from software into production of its own hardware has been cited as one of the reasons for the group's current problems.)

It was dangerous for Australia to be dependent on overseas hardware. For example, Hartley had been forced to abandon one expensive software project it had undertaken when an American hardware manufacturer decided it would not be in its interests to allow the Australian company to continue in the market.

Local hardware greatly improved the flexibility of software producers, and their financial independence.

But while countries in Asia were working rapidly to develop their own software production capabilities, Australia looked ready to miss that boat as well.

"In the 1950s Australia had the opportunity to become the banking and finance center for the Pacific, but our inwards looking, stilted and controlled business environment has killed that. The vitality of the Singapore and Hong Kong financial scenes makes ours look like a sick joke. If we do not move quickly and aggressively, the story will be repeated with software."

Lack of venture capital was another obstacle for Australian production. People did not understand the capital requirements of high technology industry, and computer companies were hit further by punitive "undistributed profits tax," which prevented them from puring profit back into their businesses.

"The further aspect of a total lack of understanding in Australia is the unwillingness to attach any value to the technology. Any high technology company's main asset is, its technology--not the bricks and mortar of a mercantilist enterprise. But Australian finance institutions write the technology off to zero when considering any proposal."

Mr Hartley attacked the "confrontationist, class attitude" of both management and unions in discussing introduction of new technology. Lack of understanding of the issues involved, and the proliferation of small trade unions, made it "almost impossible for any wide view to be seen".

"We desperately need far fewer unions and an appreciation by management and government that unions should be consulted much more than they have been, to get away from the 'them versus us' approach that will ensure we continue to degenerate to a poor backwater."

The role of Government should be to provide the correct economic environment to allow high technology enterprise to flower, and to give some support through Government purchases.

"Protection is NOT needed, as a free flow of ideas and products is a vital part of technology growth," Mr Hartley said.

Another need was to set national priorities for development, as had happened in Singapore, Taiwan, South Korea, Japan, Ireland and elsewhere.

"Is there any chance of this happening? None so far as I can see," Mr Hartley said. "We are cursed with eight squabbling Governments so that no one is able to set national priorities.

Mr Hartley suggested Australia would become "the poor white trash of the Pacific" by the year 2000 if it contineud to muddle along with its current "business-as-usual, fiddle a little...mercantilist policies".

Mr Hartley concluded that Australia was "on a downward path to mediocrity, massive unemployment, social upheaval and poverty", but that this could be averted."

A national plan, revision of the taxation act and introduction of a capital gains tax would all help.

The capital gains tax could be offset against PAYE payments made by companies, so that there was incentive to provide employment and invest in productive industries. "With this combination of capital gains tax that can only be offset by employing people I believe we would see such a surge of investment in high technology that we could forget all the investment allowances, R and D grants, et cetera."

CSO: 5500/7522

GOVERNMENT FAVORING PRIVATE ROLE IN SATELLITE; UNION OBJECTS

Minister's Views

Canberra THE AUSTRALIAN in English 19 Nov 82 p 3

[Article by Laura Veltman]

[Text] THE Federal Government is moving towards handing control of Australia's proposed domestic telecommunications satellite to private enterprise, for fear a public monopoly would discourage private investment in the field.

The Minister for Communications, Mr Brown, yesterday hardened his previous statements that the Government was considering handing to private enterprise 51 per cent ownership of AUSSAT, the government company organising the operation of the satellite from late 1985.

Mr Brown told the National Press Club in Canberra there was "no reason why a government should have a monopoly of telecommunications or communications".

He said: "(There is) great scope for growth of employment in communications and particularly telecommunications but (Australia) will not have that growth if you have a hand of government strangling the whole operation perpetually."

Authority

Mr Brown said there was a "very strong case" for encouraging private investment in the area of new communications.

Asked whether it was necessary for the Commonwealth to have veto power over policy, ownership and use of the satellite through a majority shareholding in AUSSAT, Mr Brown replied: "I am not convinced (it is) necessary in (this) area of activity."

But Mr Brown said the Government would assert its authority under the constitution over telephones, telegraphs and "like services" to control cable television arrangements if and when it is introduced.

The Government is expected to decide on the future shareholding arrangements of AUSSAT by mid-1983, when it is to be converted to a public company and a proportion of shares sold to the private sector.

Previous government policy was that it retain at least a 51 per cent share of the company, and Mr Brown's statements at the press club indicate it is moving towards an about-face of this position.

Telecom Workers' Appeal

Perth THE WEST AUSTRALIAN in English 19 Nov 82 p 25

[Text] **A MASS meeting of more than 1500 Telecom Australia Workers in Perth yesterday called on the Federal Government to ignore recommendations that the organisation be opened to private investment.**

A lengthy resolution carried unanimously by the meeting, representing eight unions, accused the Government of seeking to transfer the profitable sections of Telecom to mainly foreign-owned big business.

Telecom workers across Australia have launched a campaign aimed at pressuring the Government to for-

get about the report of the Davidson inquiry which was published last month.

Jobs

Unions have estimated that the recommendations, mostly based on cost effectiveness, would cost 15,000 jobs and add $100 a year to the average telephone bill.

But business has welcomed the access it would get to the lucrative communications industry.

The Federal Opposition spokesman on communications in the House of Representatives, Mr John Dawkins (Fremantle), told the meeting that the report's recommendations were politically impossible.

The Government had wanted from it justification for disposing of parts of Telecom in the form of commercial favours to its friends.

But the report had said that the Government should go the whole way with private enterprise in Telecom, he said.

Its recommendation that Telecom should end its practice of cross-subsidies would mean that people in country areas would be charged more.

And city people who might pay less for their telephone would pay more through increased taxes to cover the subsidies.

The suggestion that the Minister for Communications should have the power to decide who would get the franchise for parts of Telecom's business was open to corruption, Mr Dawkins said.

If the recommendation of the report were implemented every household in the country would experience problems. For this reason the report would suffocate under the weight of its own impracticality.

Australia did not need the wholesale destruction of Telecom. The report had found that Telecom performed well by international standards with the exception of a few minor problem areas which were the doing of the Government and not of Telecom.

CSO: 5500/7522

PERTH COMPANY INTRODUCES IMPROVED, LOW-COST COMPUTER

Perth THE WEST AUSTRALIAN in English 10 Nov 82 p 64

[Text]

A NEW low-cost computer for business offering dramatic performance benefits over existing microcomputers has been introduced by W. J. Moncrieff Pty Ltd, of Perth.

Known as the Sirius 1 the new personal computer combines a 16-bit microcomputer with up to 896 kbytes of internal memory and features previously available only on much larger and more expansive minicomputers.

The purchase price of $5595 plus tax shows the decline in the price of hardware as this is quite a powerful machine.

The Sirius 1 uses the CP/M-86 software operating system, with Microsoft Basic supplied as standard. Because it is a recognised standard operating system CP/M-86 provides access to many other software systems written for other computers.

There are many software houses writing programmes for the CP/M-86 system including Wordstaroo — probably the world's biggest selling word processing package, Micromodeller—an advanced financial modelling package, Supercalc — the electronic worksheet — a style of programme which has become the accepted business tool on personal computers.

To meet the needs of business and a wide range of professions and sciences, optional software languages include Cobol, Pascal and Fortran. There is also a powerful low level assembler language.

Integrated into the Sirius 1 are two single-sided 13cm floppy discs, each capable of handling 1.2 megabytes of memory storage. Integral disk drives are single-sided for maximum reliability.

An outstanding feature of the screen display is its sharpness. It has the highest resolution of a microcomputer available in Australia. The independent keyboard features an IBM Selectric-style nucleus with an additional range of special function keys and there is a separate calculator-style numeric keyboard to the right of the main keyboard.

Large size accounting documents can be displayed in full on the screen by using a second character set. Additionally, several different type fonts can reside in the system's memory at any one time.

"Good software ensures that a personal computer can be quickly put into the widest possible use," Mr Peddle said.

"With the Sirius, we are providing more available software than any other micro computer has had at the time of its launch."

CSO: 5500/7522

TELECOM DEVELOPS SMALLER, CHEAPER CIRCUIT BOARD

Canberra THE AUSTRALIAN in English 22 Nov 82 p 18

[Text]

TELECOM engineers have designed and built what the carrier claims to be one of the most complex printed circuit boards being used in Australia.

The design forms the basis of a new memory system that is 20 times cheaper, uses 30 times less power and is 100 times smaller than the magnetic technology which it replaces.

It employs solid state techniques and comprises 12 individual layers bonded together into a single board measuring 25cm by 45cm.

Grant Wilkinson, of a Telecom computer group in Sydney called the Service Provision Advice Network (SPAN), came up with the design about 18 months ago, assisted by Don Creed, also from SPAN, and Mike Snowdon of Telegraph and Data.

The need to expand the existing memory of the SPAN network prompted the design of the project.

The Australian Defence Department used the board recently as a promotion for US offset contracts, and since then the Australian Air Force has expressed interest in the design for use in its computer systems.

SPAN is a system for the distribution of telephone orders throughout Australia which uses Telecom's CUDN computer base at Haymarket in Sydney.

Despite the number of layers, the board is the same thickness as other circuit boards of a similar type and in all contains 10,000 individual connections.

The circuit diagrams were drawn by Telecom draftsmen and Morris Productions Pty Ltd in Sydney manufactured the printed circuit board.

The SPAN projects team of Warwick Gummerson, Grant Wilkinson, Mike Aitken and Pat Mulligan constructed and installed the new design, which uses Schottky integrated circuits and high speed components imported from the US.

CSO: 5500/7522

BRIEFS

TELEPHONE LINE WITH CANADA--A telephone cable linking Australia with Canada has reached Sydney. The (AUSCAN) Cable Project is part of the world's largest telecommunications project costing $400 million. The cable travels via New Zealand, Fiji and Hawaii to Canada, and connects via the North Atlantic with Britain. [Text] [Melbourne Overseas Service in English 0830 GMT 11 Jan 83 BK]

TELECOM SPENDING--THE Minister for Communications, Mr Brown, yesterday announced Telecom would order another $48 million worth of electronic exchange equipment for installation in 1983-84. He said: "This order represents another step by Telecom towards providing Australia with a digital telephone network." [Canberra THE WEEKEND AUSTRALIAN in English 13-14 Nov 82 p 5]

CSO: 5500/7523

KAREN REBELS SET UP RADIO NEAR THAI BORDER

BK160237 Bangkok THE NATION REVIEW in English 16 Jan 83 p 2

[Excerpt] Tak -- The Karen National Union (KNU), which groups various Karen rebel movements, has set up a radio station in Burma opposite this border province and is in operation on a trial, a spokesman of the rebel force said on Friday.

He said in the largest celebration of the Karen New Year anniversary in the past four years in Tambon Mawpokay, Pa-an Province, opposite Thayang Song District here that the radio station, which was installed with assistance from Japanese technicians, would go into full operation after certain "technical problems" have been solved.

The radio transmitter, which is worth about 40 million baht, is located in the Kadanigti township just opposite Tha Song Yang District here. The clandestine radio station will operate under the leadership of Lt Gen Saw Bo Mya, the Karen president of Kawthoolei, whose capital is in Pa-an Province.

Lt Gen Bo Mya did not attend the celebration, which took place during 10-14 this month in the Karen State adjacent to the Moei River, which borders Thailand and Burma, as he was taken ill, according to the spokesman. He said Lt Gen Bo Mya was receiving medical treatment for his liver problems at the headquarters of the KNU, north of Man Ler Po, about 80 kms from Tambon Mawpokay.

Most KNU leaders attended the celebration, which was the biggest compared to those organized separately in areas occupied by the Karen rebel movements this year. About 5,000 Karen people and foreigners had travelled to attend the celebration in the small tambon inhabited by about 250 families of about 3,000 Karen villagers. Most of the villagers in the tambon, which is situated in a deep jungle, are poor farmers. The tambon is a stronghold of the KNU and protected by about 200 armed Karen troopers, according to local sources.

Officials of the KNU said the celebration was organized to publicize the Karen armed struggle for independence from the Rangoon government. About 20,000 baht had been spent to finance the building of temporary quarters for visitors. The celebration comprised various types of competition, including Burmese boxing, football games, volleyball games and folk dances. The major event, a military parade, took place on January 14, which is the Karen New Year Day. KNU leaders who attended the ceremony included Prime Minister Saw Than Aung, deputy commander-in-chief Brigade General Saw Ta Ru, and about five other cabinet members of the resistance government.

CSO: 5500/4331

BRIEFS

MINI SATELLITE EARTH STATION--The construction of a minisatellite earth station project by the Singakawang Telecommunications Company at a cost of 123 million rupiah has been completed and will be inaugurated together with other projects. [Text] [BK200518 Jakarta Domestic Service in Indonesian 1200 GMT 12 Dec 82]

CSO: 5500/4329

BRIEFS

GUANGXI TELEVISION RELAY STATION--The Guangxi Zhuang Autonomous Region has completed a new television relay station with microwave color transmission on high mountains in Yulin Prefecture. It will start with trail service on the evening of New Year's Day and then begin to present regular programs every evening. This station, covering a densely populated area in southeast Guangxi was financed by the Regional Government as one of the key projects of capital construction in the region in 1982. [Text] [Nanning Guangxi Regional Service in Mandarin 1130 GMT 31 Dec 82 HK]

TIANJIN TELECOMMUNICATIONS BUILDING--The construction of a 14-story long-distance telegram and telephone building, a key nationwide telecommunications center, in Tianjin Municipality was completed on 30 December. The building covers an area of 20,000 sq meters and is 87.6 meters high. [Text] [Tianjin City Service in Mandarin 1430 GMT 30 Dec 82 SK]

GUANGDONG MICROWAVE COMMUNICATIONS--The Guangdong Provincial Posts and Telecommunications Bureau and British firm cable and wireless recently signed an agreement on building a huge microwave communications system in the province. This microwave communications system is 975 kilometers with 25 sections across Hainan Region and Zhanjiang, Zhaoqing, Huiyang and Shantou Prefectures. Its investment is 100 million Hong Kong dollars. After completion of this system, the telecommunications business, such as telephone calls, telegrams and facsimile, can be conducted and the province's communications ability at home and abroad will be enhanced. In addition, the system can transmit color television programs. At present, preparations are being stepped up. [Text] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 11 Jan 83 HK]

CSO: 5500/4112

RURAL AREAS TO GET TELEPHONE SERVICE

Bangkok DAO SIAM in Thai 22 Nov 82 pp 1, 11

[Article: "Long-Distance Telephone Service For Rural Areas"]

[Text] General Athit Kamlangek, the president of the board of the Telephone Organization of Thailand, went to inspect and see the results of the telephone activities in the various regions of the country. During his trip, he found that many districts and sub-districts are still without telephone service. This is an important factor for economic, political and social development. In accord with the Fourth National Economic and Social Development Plan, 1977-1981, and the Fifth Development Plan, 1982-1986, the government has stipulated a policy that stresses distributing income to the rural communities. At the same time, the Telephone Organization formulated the Telephone Organization Economic Development Program, 1977-1984, in order to have things be in accord with both these national economic and social development plans. Long-distance telephone service for the rural areas has been included in this plan.

In order to accelerate the long-distance telephone program for rural areas so that this service is provided to the people as quickly as possible, at a conference of the TOT board on 17 November, the board gave the telephone organization permission to purchase equipment valued at 1.7 billion baht. This will be done in order to quickly open rural long-distance telephone service in all the districts and some sub-districts that do not yet have telephone service. The number of such places is about 470. It is expected that service will be available for the people before the middle of 1984.

11943
CSO: 5500/4321

USE OF RADIO TRANSCEIVERS PROSCRIBED

Bangkok THAI RAT in Thai 14 Dec 82 pp 3, 2

[Article: "People With Transceivers Warned That This Is Illegal and That They Can Be Imprisoned"]

[Text] Police Major General Suchat Phuoksakon, the director-general of the Posts and Telegraph Department, issued a warning to people who like to import and use all types of transceivers, including radio-controlled model airplanes, wireless microphones, wireless telephones and CB radios. He said that the 1955 Radio Telecommunications Act clearly states that all broadcasting equipment is on the controlled list. Thus, people who own or import such equipment must receive permission from the Posts and Telegraph Department.

People who have not received permission are in violation of the law. The penalty is a fine of 10,000 baht or 5 years in prison or both. Concerning this measure, Police Major General Suchat said that officials do not want anything violent to occur. Things are not convenient as far as operations or arrests are concerned. This is because arresting people for this resembles [arresting] hawkers. They must be chased away. Some of those arrested have been children. Thus, those who have such equipment in their possession, intentionally or not, are requested to ask for permission from the Frequency Management Office, Posts and Telegraph Department, on Sai Lom Lane, Phahoyothin Road, Bangkok. The telephone number is 2793181, extension 756. As for requesting permission, if it is a type of transceiver for which permission can be granted, permission will be granted. It is asked that people be understanding in those cases in which permission cannot be granted because of the equipment being able to receive government communications or because it affects national security. However, the department is trying to revise this outdated law in order to bring things in line with present developments. The law will be revised as much as possible to allow people to use such equipment for pleasure or for business. As for those types that are restricted, the penalties for possession and import will be increased. To revise the law, a committee will be established. It will conclude its work within 2 months and submit its proposals to the National Frequency Management Committee in order to obtain the approval of the cabinet. Police Major General Suchat repeated that the department and the police have made plans jointly to carry on another major eradication operation at the beginning of next year.
11943
CSO: 5500/4321

DIFFICULTIES IN RUNNING EFFICIENT TELEPHONE SERVICE OUTLINED

Sofia TRUD in Bulgarian 9 Nov 82 p 2

[Article by a team from Internal Policy Department: "Hello, Do You Hear Us All Right? . . . Or Another Vicious Circle"; passages enclosed in slantlines printed in boldface]

[Text] Progress Made in Communications Only by Good Connections

Is Splicing Two Ends of a Cut Cable Easy?

Telephone-Canopy Thieves

The 12th BCP Congress set the explicit task of introducing the achievements of scientific and technical progress into the communications field on a wide scale. For telephony this means changing from the 10-step to the quasi-electronic and electronic system. The congress also indicated the way of accomplishing this task: launching the production of modern electronic dial telephone exchanges in close cooperation with the USSR and other socialist countries.

The telephone! The most sworn-at and necessary partner of our daily existence. Object of satire and praise, even the inspiration of pop singers. The squeaky instrument that links us with the world, that we reach for every minute for all sorts of reasons, long since no longer a luxury but a vital necessity.

In the years since the April Plenum of the BCP Central Committee conurbation exchange capacity has grown over 14-fold. During the Seventh Five-Year Plan alone telephone communications nearly doubled. We now make 13 million calls a day. And this five-year plan targets a 40- to 45-percent increase in the number of telephone stations. Whereas a few years ago every interconurbation and international call was booked, we now have code numbers for all okrug cities and many towns and villages in our country and abroad.

Here is what citizens say about telephone services:

Konstantin Konstantinov of Nadezhda [Hope] Zh. K. [Zhilistna Kooperatsiya; Housing Cooperative]: "The telephone frays my nerves every day. I don't know how it happens; often I dial one number and get another. Sometimes I overhear other people's conversations."

Lyudmila Zhekova, Mladost [Youth] Zh. K.: "The telephone is often on hold. I don't know whether this is due to the party line or something else."

Veselina Ivanova, Chervena Zvezda [Red Star] Zh. K.: "There are numbers in Sofia that are 'barred to the public,' so to speak. Reaching the taxicab service in the evening is a major event. It's hard to reach 'Sovspravka' [Sofia Information], the Sofia railroad station and the airport."

Stefan Georgiev, Geo. Milev Zh. K. (one of the 520,000 citizens who have submitted requests for the opening of new telephone stations): "I'm willing to put up with the most trying woes in the service just to have a telephone."

And the specialists explain:

Petko Karadzhov, chief specialist in the Ministry of Machine Building and Electronics, for example: "It's no secret that our country lags behind in switching equipment. The Ministry of Communications supports the idea of changing over entirely to modern electronic systems. Unquestionably the future is in electronic telephone exchanges. The alternative of buying electronic equipment entirely abroad has been discussed. But this is very expensive. Also, it is difficult to hook up an electronic exchange to the entire switching system since the radically new equipment has specifications for all the other links and connections in the system. With the serious personnel problem besides (there have to be engineers to back up the purely electronic equipment), it can be seen that a startup period of 7 or 8 years will be needed. Therefore, until 1990 we will still be served by the old system in operation at the moment. However, around 1986-1987 the quasi-electronic system will be introduced and will gradually come to prevail. Why don't we produce interconurbation telephone exchanges? There is no economic advantage for us in starting up a whole plant for a few dozen exchanges. But in 1983 we will begin to produce quasi-electronic conurbation exchanges."

In the course of our survey we had to get in touch by telephone with the chief of the Private Branch Exchange Service, Svetoslav Ivanov. We dialed more than 20 times. The chief's telephone gave no signal. It turned out that a power shovel operator from Energosnabdyavane [Power Supply] had just cut an 80-strand cable on Bulgariya Boulevard. At the site of the accident we found technicians from the line and cable system of STTS [Sofia Telegraph and Telephone Stations]. The group from Energosnabdyavane had obtained in advance a sketch with precise designations of the cable. In spite of this the power shovel operator, through carelessness, had cut it. Seven men were working to repair it.

Petko Karadzhov: "The cable network is complex and very expensive equipment. It should be known that 50 percent of the reasons for the poor quality of telephone connections are not in the exchanges, but in the cables. A new solution

is needed in order to reduce costs, i.e. two strands should carry more than one conversation. This is feasible with repeaters."

Cutting a cable is tantamount to doing severe "bodily" injury to the entire communications network. But last year (1981) 248 cables were cut and thousands of telephone stations were silent for 657,691 whole hours (but don't let us overwhelm you with figures).

Who cuts cables?

Ranking first are /okrug road administrations/ and right after them /agroindustrial complexes, construction groups of people's councils (?!), water conservancies, Energosnabdyavane/. In a word, construction men.

How and why do they cut them? The culprit's usual generalization is "through carelessness." Let us see now how much and whom this carelessness costs.

Engineer Georgi Stoychev, director of the Ministry of Communication's Line and Cable System: "Even if we apply all our know-how to the repair of a cut cable, the same electrical parameters cannot be obtained simply because the cable is spliced. Every enterprise that undertakes construction work gets a letter from us informing it that our equipment is in such and such an area. Despite this, cables are constantly cut.

"It may be of interest to know that whenever a cable is out of service for 1 hour, the state is out of pocket 2000 leva (not including the repair costs). It takes at least 3 hours to eliminate one fault in a multiconductor cable and this is almost record time as the normal time is actually 5 hours. Half an apartment--one of the large ones--goes up in smoke this way 'through carelessness.'

"What are we doing?" Engineer Stoychev summarizes. "We have created documenta- for all the earthmoving machines in the country. We have thus far covered about 75 percent and are continuing. We are meeting with every power shovel operator and explaining; we are also notifying private individuals through whose property our equipment passes. We are preparing propaganda materials. Ultimately we hand over the perpetrators of damage to the public prosecutor's office. But there have been no particular results."

We did not reach Svetoslav Ivanov by telephone (due to the severed cable). We went to his office. It turned out that private branch exchanges make their own "contribution" to the service. These are of many designs. Every enterprise imports them from wherever it can. Their maintenance is not centralized. Even Sredets Agroindustrial Complex has opened an exchange and network repair shop. The workshop was opened up by way of cooperative services. The checks made made by the STTS operations and equipment monitoring service show that the telephone operators at certain private branch exchanges sometimes disconnect some of the incoming and outgoing calls. In other places, supplementary technical equipment is installed on their own initiative, /contrary to article 347 of the penal code/, closing the lines to urban exchanges.

More than 200 outgoing urban lines in Sofia are now inoperative because direct dialing with zeroes is precluded.

In the new Tekhnoimport and Tekhnoeksport building the private branch exchange is new. It has three operator positions which are staffed by five operators for two shifts. On the second shift one operator position is put on hold. We saw the switchboard light up. People were ringing from the outside (from within the country and from abroad) and probably saying to themselves, "The operators are knitting stockings." But Zlatka Stefanova and Lilyana Sevova were breathless from the work. Moreover, a distriminator has been installed and all outgoing calls pass through them. The two trade organizations are unable to solve the problem by assigning a sixth operator and thus they deprive themselves of some telephone calls.

And do you know how some citizens treat public telephones? If it fails to work, the instrument in most cases gets a blow of the fist. But it is out of order because a little while before some other citizen thumped it. The citizen supplies himself from the telephone (mostly the public telephone) with spare parts, dials, receivers, coin boxes and small change. Even complete telephone sets, canopies and booths disappear! Malicious tongues say that booths have been seen, for example in places zoned for summerhouses, filling the function of toilets. Enterprising free-lancers and other "inventors" rework the Plexiglas canopies into . . . buttons, kneepads for motorcyclists and various other consumer items.

A telephone canopy costs about 130 leva. In the capital 116 have disappeared. Last year in Sofia wrongdoers stole 29 telephone sets, 1732 receivers and 796 dials since the beginning of this year, 22 coin telephones, 1194 receivers and 432 dials. In Plovdiv 81 coin telephones, 26 canopies (out of a total of 200), 83 receivers and 100 dials have disappeared.

Every year 15,000 leva are spent in the capital alone to replace the glass in telephone booths. If we reckon up in leva what has been stolen, the total will appear downright indecent.

Quite recently by way of experiment an electronic coin telephone for conurbation, interurban and international calls was placed near the entrance to Telephone House in the capital (facing St. Karadzha Street). The telephone operated with special magnetic cards that could be purhased five steps away. Everything was written out in large letters. But the set frequently became clogged. Through no fault of the set. What did the technicians take out of it afterwards--coins, playing cards, streetcar tickets, pieces of paper, sticks! Some telephone amateurs experimented to see whether the instrument would not operate even without the special magnetic card. One such instrument costs about 5000 leva!

Even the telephone installations in the housing cooperatives are an object of violations. Housings are opened, cables are cut, coin boxes are unsealed. The lead seals are used for . . . fishing gear.

The telephone, as you can see, is a complex system of problems affecting both the technical progress and potentialities of our economy and our conduct as members of society. It is one of the vicious circles from which no escape is possible solely by the efforts of the "communications" system. We have deliberately not touched, for example, on a topic like the quality of the final element of the complex circuit--/the telephone set/. Nor have we touched on other questions since these are separate topics--the subject for other articles. But even what we have managed to enlarge upon suffices to show, to some degree, the "contribution" of various departments and individuals to the varying quality of telephone service. From what has been said thus far we can draw some suggestions.

The elemental base and the quality of the materials put into telephone exchanges must be reconsidered and the input of substandard materials prohibited.

Right now, in 1982 which has been declared /a year for protection of the cable system/, it is fitting to reconsider the standards which provide penalties for violators. The existing mechanism, though strict, is not observed and permits violators to escape with impunity. Might not, for example, the power of imposing penalties be placed in the hands of the steward--the Ministry of Communications instead of the office of the public prosecutor, and that power expressed in imprisonment "from -- to --" and in payment for damage done.

Perhaps it is time to proceed with a decree on communications that will precisely indicate the tasks, the deadlines for completion and the obligations of everybody who has anything to do with lines of communication and elevation of telephone service to a modern high level.

6474
CSO: 5500/3002

BRIEFS

ADDITIONAL AMAZON TELEVISION SERVICE--Coinciding with the visit of President Betancur to Leticia, the National Radio and Television Institute (Inravision) will put a second television channel into service there this Saturday [18 December 1982]. One month after bringing the first channel to Leticia, the new administration reorganized the program structure; and now, after various consultations with televiewers of this region of the country about what they want to see, a second channel will be brought to them. Inravision Director Gustavo Castro Caycedo said that the second channel's first broadcast will be a special program to include a new presentation of the national anthem besides a message of peace by President Betancur, various items on the Amazonas region and an announcement regarding the meeting which will take place in its capital city. [Text] [Bogota EL TIEMPO in Spanish 18 Dec 82 p 2-A] 9972

CSO: 5500/2026

INDIAN MEDIA FACILITIES DURING ASIAD PRAISED

Calcutta THE STATESMAN in English 9 Dec 82 p 9

[Text] New Delhi, Dec 8--Radio, TV, Press, telephones, telegraphs and other overseas communication facilities extended by the Ministry of Communications for the Asian Games have been praised by a number of foreign organizations and individuals, an official release said here today.

Besides television and radio, the special arrangements included information on games results via computer, international trunk telephones, Press, telegrams and photo services among different stadiums and games cities of Bombay, Jaipur and New Delhi and news agencies.

More than 1,500 overseas telephone calls were put through from the public telephones set up for the Asiad. The international trunk exchange handled an estimated extra 4,000 overseas calls during the fortnight. About a thousand telegrams were booked from stadiums and the Asiad village of which nearly 300 were Press telegrams. The trunk calls and Press message were put through in a matter of a few minutes. The prompt and courteous service by the Posts and Telegraphs Department was appreciated by various people.

The 50 data circuits were set up for the Asiad. They helped the National Information Center to project the results which were promptly provided by the P. and T. department.

The 552 broadcast lines and other non-exchange lines for radio, TV and other agencies worked faultlessly.

The Overseas Communication Services enjoyed heavy bookings for nearly 200 TV and 346 radio programs and handled more than 2,000 overseas telex calls and nearly 1,200 radio photo telegrams.

The Delhi telephones had set up 14 electronic telephone exchanges to serve the Asiad village and the five-star hotels which were made ready for the games. Nearly 1,200 telephones, and 156 hot lines, 26 telex connexions and 82 teleprinter lines were established between different points in Delhi and between Delhi, Bombay and Jaipur in connexion with the Asiad.

The Delhi Telephones had published a special telephone director for the organizations connected with the Asiad and more than 72,000 callers obtained results over the phone by dialing 57-1982

In response to a request from the special organizing committee, engineers of the Telecommunication Research Centre worked round-the-clock to commission a radio paging system to enable contact with the administrators of the various stadiums by the organizing committee.

Interpreters for Arabic, Japanese and Chinese language were employed. Specially designed stamp packs delighted many philatelists. The department issued 12 commemorative stamps on Asiad themes during 1981 and 1982.

CSO: 5500/7048

WORKING GROUP TO SUGGEST GUIDELINES FOR TELEVISION

Madras THE HINDU in English 14 Dec 82 p 9

[Text] NEW DELHI, Dec. 13.

The Information and Broadcasting Ministry has set up a working group to have a close look at the Doordarshan programmes and to prepare a software plan. This is considered necessary now that the TV network is poised for a major expansion.

According to Mr. S. P. Lal, Secretary to the Ministry, the group will keep in mind the main objectives of TV — to assist in socio-economic development and be an effective medium for information, education and entertainment. It will also examine the question of a multi-channel service. Going by the public statements of the former Information and Broadcasting Minister, Mr. Vasant Sathe, there was a definite decision to have additional channels. But the plan, it appears, is yet to be fitted into the Ministry's priorities and financial resources.

Doordarshan is pleased with the low-power transmitters, set up at 20 centres on the eve of the Asiad and would like similar equipment installed at other places, but a definite expansion programme is yet to be formulated.

The terms of reference of the working group do not specifically mention the national programme but, perhaps, this aspect will be examined, particularly because of the controversy over its quality and content.

The working group will comprise: Dr. P. C. Joshi, Director, Institute of Economic Growth, New Delhi, Chairman, Sai Paranjapye, film director, Bombay, Mr. Alyque Padamsee, Lintas India Limited, Bombay, Prof. G. N. S. Raghavan, Indian Institute of Mass Communication, New Delhi, Mrs. Rama Chhabra, Family Planning Foundation, New Delhi, Dr. Binod C. Agarwal, Space Application Centre, Ahmedabad, Miss Rina Gill, film producer, New Delhi, and Mr. M. Amin, Additional Director General, Doordarshan (Member-Secretary).

The terms of reference of the working group are: To prepare a detailed software plan taking into consideration the main objectives of TV.

To examine the need for starting a multi-channel service considering the composition of urban and rural viewers and recommend a programme pattern, taking into account the programme production facilities, both existing as well as planned.

To assess the manpower requirement and training facilities and suggest measures for improvement from the point of view of software, and

To evolve a system of evaluation for programmes and artist performance as well as a system for monitoring programmes.

The group has been asked to submit its report within four months.

CSO: 5500/7049

EXPERTS SAY NO NEED TO IMPORT COLOR TV TECHNOLOGY

Calcutta THE STATESMAN in English 17 Dec 82 p 9

[Text]

NEW DELHI, Dec. 16.—The Central Electronics Research Institute at Pilani has made known to the Government its considered view that there is no need to import technology for colour television.

Explaining the capabilities of Indian technology in the field of colour TV, the Director of CERI, Mr Amarjit Singh, told reporters here today that, in collaboration with the National Research Development Corporation, it was proposed to set up a demonstration cum-production plant for colour TV.

Mr H. S. Rao, director of NRDC, said that the idea of the project was to take the results of research to the stage of production in order to help entrepreneurs take over commerical production.

The NRDC is willing to invest about Rs 15 lakhs in the project, the details of which were being worked out in consultation with the various agencies.

As far as the interests of multinationals were concerned, it was pointed out that because of a general recession in the world market, including in the electronics field, overseas companies were looking for entry points and were prepared to offer long-term credit, even if it meant dumping goods at subnormal prices.

A point which Mr Singh and Mr Rao left unsaid was that the Government still had no clear policy on colour television. Whether it would be worth using expertise and spending money on a costly colour project about which the Government was yet to make up its mind was a moot question.

The Government could, as suggested by some local TV manufacturers, set up a colour TV unit with the help of one or more multinationals exclusively for exports. But then, when there was general recession, would there be ready markets for the products?

Already because of the Asiad stampede, an estimated 200,000 colour TV sets are said to be lying around at various airports. Add to this about 100,000 colour sets already assembled under the recent ad hoc one-time import policy of the Government and one has an idea of the extent of the glut.

It is true that the picture tube for colour television is still an imported item but, as the Indian scientists pointed out, the cost of imported assembled sets could be kept low only because India had developed enough expertise to manufacture many components.

In all this, only one thing seems reasonably clear—once the Government decides to go ahead with colour television Indian scientists would not be found wanting.

CSO: 5500/7050

NEW TELEPHONE EXCHANGES SET UP IN DELHI

Bombay THE TIMES OF INDIA in English 17 Dec 82 p 9

[Text]

NEW DELHI, December 16.

NOW that the Asiad is over, telephone connections will be made available to people in certain "frozen" areas in Delhi.

These include areas served by the telephone exchanges at Rajpath, Secretariat, Hauz Khas, Shakti Nagar, Shahdara, Ghaziabad, Faridabad, Ballabhgarh and Nangloi.

In 1982-83, up to the end of October, 144 new telephone exchanges have been opened in the country and 54,000 new telephone connections provided.

Among the new exchanges are Karol Bagh in Delhi and Wadala and Marol in Bombay, with 10,000 lines each and Jaipur 6,000 lines.

MORE EXCHANGES

Besides, installation work is in progress at Nargaon, Mankhurd and Worli in Bombay, and Shaktinagar Delhi with 10,000 lines each and Chandigarh 6,000 lines. These exchanges are likely to be commissioned before the end of March next.

Electronic trunk automatic exchanges at Bombay and Calcutta are expected to be commissioned by the end of March. Work on the Delhi electronic exchange is in progress and it is likely to be commissioned in the first quarter of 1983-84.

CSO: 5500/7051

TELEPHONE NETWORK IN LORESTAN TO BE EXPANDED

Tehran SOBH-E AZEDEGAN in Persian 22 Nov 82 p 15

[Interview with Engr Afsharian, managing director of communications in Lorestan Province; date and place not specified]

[Text] Khorramabad--On the anniversary of the victory of the Islamic revolution, on 11 Feb 1983 a 2500-number telephone network will go into operation in the municipality of Aligudarz.

Engineer Afsharian, managing director of communications in the Lorestan Province, discussed what has been done in the matter of communications between the cities and the villages, as well as plans which are being carried out by this center in Lorestan Province, in an exclusive interview with a correspondent from the ISLAMIC REPUBLIC NEWS AGENCY. He said: One of the country's basic communication policies after the victory of the revolution was to establish communications between the villages. In pursuit of this goal, so far this year, through the efforts of engineers, technicians, and committed workers from this company, we have been able to provide communications between the service offices of the villages of Choghlundi, Chaman Soltan, Gandomieh, Afarineh, Alanjard, and Mamun, and we have converted the telephones in the Sepid Dasht district center from 40 to 60 semi-automatic numbers and the district center in Zagheh has been converted to a 40-number semi-automatic system.

He said: Next month communications in the Choghlundi district will be expanded, and also in the Dorud district around 20 to 30 telephone lines, a 60-line intercity telephone system will be installed, and three-channel communications connecting Khorramabad to Aligudarz, Azna to Aligudarz, and Chaman Soltan to Aligudarz, have been installed.

With reference to the expansion of the 2400-line telephone network of Khorramabad, the managing director of telephone communications in the Lorestan Province said concerning the launching of automatic telephone service in Aligudarz:

The work of installing the 2400-line automatic telephone network for this province has been done. We are dividing up the municipal telephone network, and, God willing, it will open and go into operation on 11 February, the

anniversary of the victory of the Islamic revolution of Iran. This center will be expandable to 10,000 telephones.

Concerning automatic telephone service for the city of Khorrambbad, he said: In the first three months of the current year [March-June] 1400 telephones were issued to applicants in this city.

Concerning automatic telephone centers for the cities of Borujerd and Khorramabad, Engineer Afsharian said: Khorramabad's 7,000-telephone center and Borujerd's 8,000-telephone center are both expandable to 10,000 telephones.

Regarding this company's future plans, the managing director of communications in Lorestan Province said: The communications company has undertaken to build telephone centers in Dorud, Azna, Alshotor, Poldokhtar, and Kuhdasht, and more than 90 percent of the work has been completed. After the completion of building construction, the work of installing automatic telephones will be undertaken. In the implementation of this plan, 3,500 telephones will be installed in Dorud, 2,000 in Azna, Alshotor and Poldokhtar, 1,000 each, and 2,000 in Kuhdasht.

With the help of the governor-general of Nurabad, a lot has been selected for the construction of a telephone building, and when that is built, a 1000-telephone automatic telephone unit will be installed.

He said: one of the communications plans for the current year is to establish communication links between the villages of Sad Asiab Haji Abad, Sandarkan, Chaghabol, Zhan, Siahpush, Dasht-e Kamalvand, Heshmat Abad, and Shul Abad. These villages had no form of communication whatsoever during the time of the idolaters, and it never even occurred to the villagers that communications would be established for them. This is one of hundreds of communications plans which are being carried out to provide relief for deprived people.

9310
CSO: 5500/4708

BRIEFS

TELECOMMUNICATIONS AGREEMENTS WITH SENEGAL--Dakar, 17 Jan (SPA)--Minister of Information Muhammad 'Abduh Yamani and Senegalese Minister of Information and Telecommunications Djibo Ka this evening signed two agreements for cooperation between the radio and television in the two countries and between the SPA and the Senegalese News Agency. The two agreements provide for exchanging experiences, radio and television programs, and news, opening offices for the two agencies in the two countries, installing direct lines to transmit the news and aiding the missions of broadcasters, journalists and the correspondents of the two agencies. The kingdom's ambassador in Dakar, 'Abdallah al-Tubayshi, and the Senegalese ambassador to the kingdom were present at the signing ceremony. [Text] [LD180252 Riyadh SPA in Arabic 2208 GMT 17 Jan 83]

CSO: 5500/4516

'PANA' CONVENTION RATIFIED, MPS DEBATE NEWS FLOOD

London WEST AFRICA in English 3 Jan 83 p 56

[Text]

Sierra Leone has ratified the Convention of the Pan African News Agency (PANA), one of the specialised agencies of the OAU. Introducing a government motion in parliament for the proposed ratification, the Minister of Information and Broadcasting, Dr. Moiwo Korji explained that one of the objectives of PANA was to correct the distorted pattern of news about Africa as reported by foreign news agencies and organisations. He said such distortions have not worked in the best interests of African nations. The Minister assured members that PANA would enable African countries to gear their mass media activities towards their economic and social aspirations.

During the debate which followed, the Minister of State Mines, Mr. John Kamanda said that Sierra Leone's mass media services must be properly developed to enable the country to contribute positively to the ideals of PANA. The member for Makeni Town, Mr. Alpha Conteh urged government to look into the present press laws of Sierra Leone with a view to enhancing proper representation of the country at PANA. In his contribution, the member for Tonkolili Central said that such a powerful organisation like PANA would provide African countries with factual reports on OAU meetings.

The member for Port Loko South I constituency, Mr. S. A. T. Koroma said that the clause relating to the finances of PANA was ambiguous. He wanted to know what Sierra Leone's financial commitment to PANA would be, and urged the Minister of Information to ensure Sierra Leone's representation on the PANA executive committee. The member of parliament for Kono North West, Mr. Dominic Musa expressed concern over PANA's sources. He stressed that if most of its finances were going to be subscribed by foreign bodies, the danger of distortion of facts would not be solved.

CSO: 5500/83

BRIEFS

TV2 EXPANDS--THE TV2 transmitters at Middelburg and Davel will start transmissions on Monday next week. The first month of transmission will be considered as a test period in which transmission may be interrupted without warning or apology to carry out necessary adjustments or repairs. Middelburg transmission will be on channel 45 and horizontally polarized. UHF receiving antennas, colour coded yellow, will give the best results. Davel transmission will be on channel 30 and horizontally polarized. UHF receiving antennas, colour coded red, will give the best results. [Text] [Johannesburg THE CITIZEN in English 8 Jan 83 p 9]

CSO: 5500/82

BRIEFS

NEW TV EQUIPMENT--TECHNICIANS are busy installing a television transmitter at Glenlivet near Masvingo which will improve reception in the area, a spokesman for Z B C's Director-General has said. The spokesman was commenting on a report which apepared in the Herald on New Year's Day saying residents of the town had sent a petition to the ZBC. The petition organiser, Mr Stan Clark, said he had not received a reply by last week. But a reply was sent out on September 9, said the ZBM spokesman. In that letter, Mr Clark was told that among the new equipment which had just arrived from France was a transmitter for the Masvingo area. The spokesman gave the Herald a copy of the letter. The spokesman said the ZBC had been approached by the Herald on the phone asking for comment. The corporation had asked to look at a written copy of the complaints but had not received it. [Text] [Harare THE HERALD in English 5 Jan 83 p 5]

CSO: 5500/81

ARTICLE VIEWS GOVERNMENT, INDUSTRY TIES IN SWEDEN, NORWAY

Swedish Telecommunications Agency, Industry Close

Oslo AFTENPOSTEN in Norwegian 12 Jan 83 p 36

[Article by Knut Lovstuhagen: "Swedish Telecommunications Agency Cooperates Closely With the Telecommunications Industry"]

> [Text] "Developments in the telecommunications area are moving steadily in the direction of harder competition in fields which previously have been protected by monopoly. In order to stay together and meet this challenge, we must be flexible and able to make rapid decisions. The corporate form gives such flexibility, and therefore we have gone into cooperation with the Swedish telecommunication industry and set up corporations in areas exposed to competition," said Managing Director Tony Hagstrom of the Swedish Telecommunications Administration to AFTENPOSTEN.

Managing Director Hagstrom said that cooperation so far has been very successful. As an example he points to the digital telephone exchange AXE--developed in cooperation between the Telecommunications Administration and the electronic giant L.M.Ericsson.

"The exchange is sold over the entire world, and is the result of a unique combination of our operating experience and the production knowledge of industry," said Hagstrom.

The close cooperation between the Telecommunications Administration in Sweden and the national telecommunications industry is a model for discussions which are taking place here at home between the Telecommunications Administration and a number of telecommunications and computer firms. The goal is to create a "Norsk Bedriftskommunikasjon AS" [Norwegian Business Communications Co.] which will further develop and market communications systems designed for business. The discussions, which have now come to a pause while waiting for a further clarification of the political attitude toward the project, involve the Telecommunications Administration, the Electric Bureau, Standard Telephone and Cable Factory, Norsk Data, Tandberg Data and Mycron.

"Have there been objections in Sweden to the Telecommunications Administration competing in the market with private suppliers, while the state at the same time is the organ which approves products made by private suppliers?"

"This problem was solved by setting up a committee which has the job of ensuring that our approval activity is correctly done. Our decisions can be appealed to the committee, which consists of two representatives appointed by the Riksdag and two by us, while a professor of law heads the committee. As far as I know the committee has not dealt with any complaints during the time it has been in existence," said Hagstrom. He added that there is political agreement that the Telecommunications Administration should continue to run the basic telecommunications services.

In the discussions about setting up the Norsk Bedriftskommunikasjon AS the problem of the approval function has been in the center. Solutions which have been discussed include a committee, such as they have in Sweden, or splitting off the part of the Telecommunications Administration which deals with approvals and standardization from the administration. Such tasks could be transferred to an organization such as NEMKO [expansion unknown] under the Ministry of Transport and Communications.

The cooperation between the Swedish Telecommunications Administration and industry has three parts. Ellemtel Utveckling AB is the name of a corporation owned 50-50 by L.M.Ericsson (LME) and the Telecommunications Administration. The company does development and construction work in telecommunications areas on assignment from the owners. Ellemtel was created because the mother organizations were doing parallel development work in the 60's, something which was too expensive. The most obvious result of this cooperation is therefore AXE.

In Ericsson Information Systems AB, which markets such products as telephone exchanges, modems, business systems and telephones, LME has at least 90 percent of the stock and Teleinvest AB has the rest. The latter manages and conducts the stock interests of the Telecommunications Administration, and Managing Director Tony Hagstrom is the working chairman of the board.

Discussions aimed at establishing the Norsk Bedriftskommunikasjon AS will probably give a clearer explanation in the spring of how the expected cooperation will take place. There are questions such as the division of ownership interest and which products will be included in the combined activity. It is already clear that the participating firms will be able to work in the market as independent units, even if they are a part of the corporate constellation. The offer to participate is not limited to those who participate in the discussions.

Managing Director Kjell Holler in the Telecommunications Administration told AFTENPOSTEN that it is necessary to have organized cooperation between the Telecommunications Administration and industry. "This is especially

true in areas where there is a blending of computer and telecommunications technology, as we are experiencing continuously increasing competition in the market. When it is desirable for a corporation to deal with further development and marketing of internal communication systems, it has the capability to make rapid decisions so that we can adapt to changed markets and competitive circumstances," he said. He added that there still are other forms of cooperation which are used and will continue to be used, for example development contracts with industry.

Holler said that some time ago a recommendation was sent to the Ministry of Transportation and Communications about setting up a committee to handle complaints in connection with the approval by the Telecommunications Administration of equipments from private suppliers. The majority in the committee should come from the Telecommunications Administration. There has not yet been any reaction to the recommendation. Holler said that to put equipment approval and standardization in an outside organization would be an expensive solution, but feasible if the private firms are willing to pay the price.

Norwegian Minister Wants Less Government Involvement

Oslo AFTENPOSTEN in Norwegian 12 Jan 83 p 36

[Article: "Cabinet Minister Inger Koppernaes Says It Is Interesting for Norway"]

> [Text] "I see large problems with the Telecommunications Administration as a monopoly institution participating with large ownership interests in a corporation such as is being planned in the Norsk Bedriftskommunikasjon AS. On the other hand I clearly understand the industry aspect of the project. It will be very interesting if Norwegian industry can go together to develop the type of products being discussed, based on development contracts from the Telecommunications Administration," said Minister of Transportation and Communications Inger Koppernaes to AFTENPOSTEN.

Even if the minister ignores the Telecommunications Administration as a large stockholder in the planned corporation, she is not negative toward the discussions taking place. She therefore is waiting for the conclusion of that work, and does not reject the idea that a state monopoly can be included through a smaller block of shares. A precondition must be, however, that the role of the Telecommunications Administration in approving the equipment of private suppliers must be shifted to an organization such as NEMKO. Koppernaes also has doubts about the national sales apparatus of the Telecommunications Administration being at the disposal of a Norsk

Bedriftskommunikasjon AS--an advantage for private suppliers who would be able to make it illusory to speak of market competition.

"Is it therefore futile for the discussions to continue?"

"I believe that the work should continue. But perhaps they should look closer at other models, for example dividing into a development company and a sales company, with the Telecommunications Administration participating in both," said Minister Koppernaes.

Norway Hopes to Join Sweden in Tele-X Project

Oslo AFTENPOSTEN in Norwegian 13 Jan 83 p 3

> [Text] With 110 installations sold last year, the Electric Bureau [EB] was in third place on the list of the world's leading suppliers of so-called ship-to-shore stations--equipment which handles telephone and telex communications between ships and shore by satellite. In first place was a Japanese firm, followed by an American. EB is now hoping that the meeting between Prime Ministers Olof Palme and Kare Willoch will result in an agreement on Norwegian industrial participation in the Swedish satellite project Tele-X, so that EB can apply its technology from the ship-to-shore stations to that project.

"Our investment in ship-to-shore stations has created a successful industrial project, but we need a base in the future like Tele-X to be able to utilize the special competence that we have built up," said civil engineer Hakon Otterlei at EB to AFTENPOSTEN. "If it now becomes clear that Norway is going to participate in that satellite program, we will supply a large part of the equipment which will be used in connection with the experiments to be conducted. This includes small transmitter and receiver terminals developed from our ship-to-shore stations, and we will also deliver a large control station of the same type as the shore station which we have constructed at Eik in Rogaland in connection with satellite-relayed telecommunications traffic to and from ships.

EB will have close cooperation with the Swedish electronic firm L.M.Ericsson if there is Norwegian participation in Tele-X.

According to the plan Tele-X will be placed in orbit in 1986, and the entire project is estimated to cost about 1.2 billion kroner. The experiments with the satellite will first involve high-speed data communication, while TV transmission direct to home receivers is also in the program. Two channels for that purpose are included in the satellite, which thereby becomes a predecessor of the long-planned Nordsat.

Denmark has already rejected the offer to participate in the Tele-X project.

9287
CSO: 5500/2583

FINANCING, FEES FOR BUNDESPOST'S COMPUTERIZED SERVICES VIEWED

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 13 Dec 82 p 13

[Article by Ulrich Schulze: "The Bundespost's Incomprehensible Silence"]

[Text] The Bundespost [Federal German Postal Service] is obligated by legal mandate to continue to develop its services in a manner that is up to date and conforms with demand. It has the overall responsibility for the smooth functioning of telecommunications, that is, for the transmission of information in the form of speech, text and images or in the coding of digital data. According to its own statements the Bundespost intends to continue to exercise this responsibility in the future.

Mention the word "letter" and the citizen thus almost automatically thinks of the Bundespost service operation, this also applies to the telephone, and in the future, is also expected to be true of videotex [equivalent of Bildschirmtext, abbr. Btx], thus that segment of the broad spectrum of new communications equipment for which the Bundespost has declared itself responsible, which it is pushing forward on and is continuing to develop for broad application. The basic situation is favorable: Btx depends on connecting together three different kinds of equipment: television set, telephone and computer. In the FRG 96 percent of the households own a television receiver; the telephone system, with 29 million hookups, has reached almost 90 percent of the households--and ideal condition for introducing a new communication service.

The Bundespost has recognized this and taken appropriate steps: In 1977 it adopted "Prestel," a basic technology which was developed in England, developed it further and then introduced it as the "Btx" telecommunication service. In 1979 the equipment was introduced in a small circle as a new "telecommunication service." In 1981 the Bundespost publicly praised its new "mass communication means"; the news soon followed that Btx will be introduced in the FRG in 1983. During this period development and fine tuning of the equipment were pressed forward. In order to be able to connect the television set and the telephone with the computers there must be a decoder in the color television receiver in order to make visible the impulses transmitted by the computer, in the form of characters or graphics on the television screen, and a modem for the telephone is required for connecting to the television set.

The Bundespost investments. By 1986 DM500 million are to have been made available for the Btx. In allocating the advertising budget amounting to DM50 million, the Bundespost took care to make the system proper, that is, ready for the postal service. The job for the advertising agents read: "Introduction of Btx Starting 1983." The order volume comes to DM50 million for development and manufacture of the central computers which as Btx switching centers will make communication possible from 1982 on. Technicians from the Central Telecommunications Office and the instrument industry are tinkering with the decoders; other companies received an order to produce 400,000 modems for the Bundespost. This is all taking place according to the technical planning data and on the basis of the Bundespost's prediction of a rapid spread of Btx; the Bundespost is holding itself and the industry responsible for all this. It sets the deadlines, it establishes the capacity of the equipment which is being developed and produced by the industry--and calculated and marketed, and not too expensively, according to the representations of the Bundespost. Thus, the Bundespost is betting on the industry's ability to innovate, that is on private industry. It is sharing the investment responsibility with the companies.

Meanwhile, there exists the idea of Btx as a convenient data bank, as an electronic marketing system and as a planning aid; Btx for home use and especially for use and especially for use in industry and administration. In 1985 about 60,000 different Btx information suppliers are expected to have offerings available for about 600,000 business and 400,000 private subscribers, capabilities such as remitting money, direct ordering from mail order catalogs, retrieving current information or special information. Btx is thus offered as a piece of equipment which over the years can guarantee jobs and create new ones, fulfill individual wishes and is not supposed to cause any harm. All that is certain. Only one thing is unknown: what will this general service cost the subscriber, what fee will he have to pay?

Postal minister Schwarz-Schilling--rejecting the next step--in this connection called to mind the demand on the part of the Laender to be part of the decision; yet so far the Laender have been responsible for defining and regulating Btx. In the Postal Ministry there is recognition of the necessity to figure fees according to the industry's point of view. In the next few years the Bundespost's investments are to be balanced out by the fees. This can first be accomplished by making Btx public as a low-priced communication system for business. The Bundespost must, of course, also see to it that the new service can be afforded by every household because only then will there be the required vitalizing effect for the industry: demand for equipment. Both appear necessary if Btx is to become the "mass service" as described in anticipation by the respective postal ministers, Gscheidle, Matthoefer and Schwarz-Schilling. The hesitation on the part of the Bundespost turns out to be the delay caused by the uncertainty about which part of the development the Bundespost has no influence

One thing is certain: Btx as a branch service of the Bundespost must be self-supporting. The fees will become effective in 1985, the Bundespost's calculations depend on an anticipated base of one million subscribers for

1986. The fees will relieve the subscribers, but will burden the information suppliers. There will be basic monthly fees and use-related fees for the utilization of the computer capacity and of the telephone system. The structure is the result of the capability which Btx offers in terms of technology.

At first glance fee computation appears to be a simple administrative act, such as is necessary each time a new service area is introduced by the Bundespost. But the user of traditional services, such a telex or remote copying, can reconstruct in a relatively easy manner the cost-service correspondences. This is not true of Btx--neither for the Bundespost nor for industry, and intensified by the silence to date on the part of the minister of post, not even for the citizen. The success of a "mass service" such as Btx, however, depends on the equipment costs and to a decisive degree on fees. For this reason the silence by the Bundespost in this area to date is incomprehensible.

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BERLIN TO BE CENTER OF FIBER OPTICS INDUSTRY

Frankfurt/Main FRANKFURTER ALLGEMEINE ZEITUNG/BLICK DURCH DIE WIRTSCHAFT
14 Dec 82 p 1

[Text] Gz. Berlin, 13 December. Postal Minister Schwarz-Schilling announced that between 1985 and 1995 the Post Office intends to install approximately 1 million kilometers of cable for fiber optic telecommunication system for the transmission of newsbroadcasts. AFter the announcement, five electronics firms decided to construct a plant to produce fiber optic cable. The consortium will be headquarterd in Berlin. The companies of AEG-Telefunken, Kabelwerke AG Rhedt, Kabelmetal Electro GmbH, Phillips Kommunikations Industrie AG, Siecor Gesellschaft fur Lichtwellenleiter mbH (subsidiary of Siemens AG), and Standard Elektrik Lorenz AG are seeking to insure that by the time of the first stage of installation in late 1984, a yearly production capacity of approximately 100,000 kilometers of fiber cable will be available in West Berlin.

Berlin's unique infrastructure and geographical advantages were stressed by Dr. Mecklinger, engineer and member of the SEL board of directors, during the consortium's 8th working session in Berlin on 10 December. The interested firms are waiting for the Berlin Senate to open specific negotiations for any possible participation in the Berliner Kabelkommunikations-GmbH proposed for the pilot cable project. They welcome the fact that the Berlin pilot cable project will play a pivotal technical and innovative role in the development and testing of "computerized audio-visual interactive telecommunications services," pioneering the high-frequency interactive communications services based on fiber optics.

Closely associated with the Berlin pilot cable project, interested sectors of the economy see the importance of developing special models of cooperation to solve the basic softward problems of technology and content for interactive communications services. A starting point of such cooperative efforts could lie in the development of software for training in the field of telecommunications by means of this technology.

The problems of so-called man-machine communication are regarded as crucial for the future of telecommunications. There exist especially favorable conditions in Berlin for ground-breaking contributions to the solution of such problems. The various institutes of the Technical University of Berlin have made preliminary studies on the subject. Several firms of the electronics industry are determining if, and under what conditions, they will be able to participate in a joint research project.

9952
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SATELLITE PROJECT WITH HUGHES SEEN AS 'MOST PROMISING'

Paris AVIATION MAGAZINE INTERNATIONAL in French 15-31 Dec 82 -- 29-43

[Article by Jean Orion: "Promises and Uncertainties"]

[Excerpts] Whether viewed from the standpoint of France's purely domestic effort or that of its international cooperative undertakings, France has achieved results over the past 10 years that are more than encouraging. But what about the future? In the domain of launchers, the outlook is good, subject to the attainment of qualification by Ariane. In the realm of telecommunications, the future appears somewhat dimmer; and as for the post-Spacelab sector, France does not seem to be too interested.

The years 1982 and 1983 are pivotal ones for the European space effort, between the coming to an end of one program and the start of one that is yet to be adopted. The time has also come to profit from the lessons of a number of international requests for bids in space telecommunications--Arab League, Australia, Brazil, Colombia, Mexico--in connection with which European industry has obtained results we would characterize as mixed.

The principal French industrial firms concerned--SEP [European Propulsion Company], MATRA [Mechanics, Aviation and Traction Company], Air-Liquide--are facing today the prospect of levels and continuity of annual revenues, from the intermediate- and long-term standpoints, to which they have not been conditioned by their space activities to date.

The development of Ariane, to and including Ariane 3, has probably represented 4,100 million francs of industrial contracts, in current francs, for France. The development of the next version, Ariane 4, already budgeted for, will add 1,450 million francs to this sum. The eight launches per year called for under present projections, will result in a manna for French industry of 1,000 million francs per year, not counting revenues from launching operations, until 1992 or 1994, at about which time Ariane 4 will probably have come to the end of its operational life. The stakes involved in a rapid and enduring effacement of the L-5 failure and in proving that Ariane offers an adequate level of reliability are obvious. The challenge is one that the budding European space industry cannot afford not to meet. But perhaps

the time has also come to recall that, essentially, this industry and the aeronautics industry are one and the same, and that it should not be impossible to put to good account, in the production of Ariane, the experience gained throughout decades of aeronautical production.

No one questions the fact that French industry will still be called upon to play a major role in the program that is to succeed Ariane 4. The launcher sector is certainly the one in which the leverages created by the 1973 interministerial program--from both the governmental and the industrialists' standpoints--are the most irreversible. The problem is essentially, therefore, one of programing and planning: What decisions must be taken today to guarantee to Ariane 4's successor, in 1992 or 1994, a share of the launcher market at least the equivalent of the promising one Ariane 4 can look forward to today?

The answer is not an easy one, in that, it touches, at one and the same time, on the nature of the launcher--disposable or to a greater or lesser extent recoverable--and on the payloads it is anticipated may have to be launched after 1994. Depending on what assumptions are made with respect to the advent or non-advent, during the intervening years, of payloads connected with the processing of new materials in space, the resulting designs of the launchers can be very different. The debate among the principal partaking parties--ESA [European Space Agency], CNES [National Center for Space Studies], industries--will be very interesting to follow, and the stakes will be of paramount importance.

Space Telecommunications

The situation of French industry in the domain of space telecommunications can be viewed as favorable, if one considers that it is a partaker in two international regroupings involving top-bracket partners. But it can also be viewed as unfavorable, if one considers that, in wanting to advance in all directions at one and the same time--cooperation with Great Britain on the one hand, with the FRG [Federal Republic of Germany] on the other, as well as within the European framework but also within that of trans-Atlantic cooperation--France risks dispersing its efforts and its investments--those involving public resources as well as those ever more necessary ones of its industrialists -- and ending up losing on all fronts or, at best, finding itself reduced to the level of a relatively minor subcontractor.

It is important also to note that, whereas in the United States the major prime contractors in space telecommunications are their own builders of payloads, the four principal companies in Europe with ambitions in this domain are, essentially, airframe builders, who subcontract this fundamental element of the system to specialized firms (Thomson-CSF [Thomson-General Wireless Company], MSDS [expansion unknown], Selena, etc). It becomes clear that, while France looks into the possibilities and the advantages or disadvantages of bringing about a more or less harmonious coexistence of the

activities of MATRA and AEROSPATIALE [National Industrial Aerospace Company] so as to better ensure their futures and avoid dispersions of effort and conflicts of interest, the big national electronics firm is quietly pursuing its course of cooperation with Hughes Aircraft which started with Intelsat 6 (in which Thomson-CSF is a major partner of the big Los Angeles-based industrial firm) and which is to be extended over the intermediate and long terms into other programs, including, it would seem, certain domestic American ones.

This cooperation could very well, in time, become the most stable and most promising of the French industrial firm's activities in the domain of space telecommunications, inasmuch as it bears on a high-technology domain: The payload.

Low-Orbit Experiments

France participates only to the extent of 10 percent in the budget for the European Spacelab program, involving a manned space laboratory to be launched by the American Shuttle; and certainly, very few could be found in government or in industry today who are of the opinion that, in view of the possibilities offered by this program, our participation should have been greater.

The least that can be said in this regard is that the outlook for operations in orbit, in the presence of a human experimenter, has not aroused impassioned interest among the scientific or industrial laboratories of the world community. The number of flights of the European space laboratory in its nominal configuration, that is, with crew aboard, will probably never exceed a very few. From this point of view, France's initial decision--which was to not take part in Spacelab except to the strict extent to which it would yield, on the other hand, a reciprocal participation by the FRG in Ariane--turns out, 10 years later, to have been fully justified. But there are relevant analyses--and that was certainly one of them--that carry within them the seeds of their own poison.

It would be deadly if recognition of the relative failure of Spacelab were to give way, on this side of the Rhine, to accreditation of the thesis that nothing worthwhile can be done in space, over the intermediate and long terms, other than the orbiting of conventional satellites as we know them today. Now, judging from a certain "mothballing" of projects such as Solaris or from France's meager participation in the EURECA [European Retrievable Carrier] program, we are led to think that this thesis is tending to become that of our present government authorities. No one can say with certainty whether Solaris is or is not a good program, but an operation such as EURECA, the first experiment on the processing of materials in space, certainly warranted more than the 18-percent budgetary participation France has agreed to devote to it.

(1) PROGRAMMES CIVILS

(2) A) NATIONAUX

(3) Type de matériel	(4) Désignation	(5) Fonction	(6) Client	(7) Maître d'œuvre	(8) Observations
(9) Lanceurs	–	–	–	–	–
(10) Laboratoire spatial	–	–	–	–	–
Satellite	Telecom 1	Télécommunication	DGT/CNES (11)	Matra (Fr) (12)	
Satellite	Spot (13)	Observation Terre (14)	CNES (11)	CNES (Fr) (11)	avec participation Suède et Belgique (15)

(16) B) EN COOPERATION
(La France étant partie prenante)

(9)	Lanceur	« Ariane »	Lanceur (9)	ESA (17)	CNES (Fr) (11)	architecte industriel : SNIAS (18)
(10)	Laboratoire spatial	« Spacelab »	Labo-spatial (10)	ESA (17)	ERNO/MBB (RFA) (19)	
(10)	Laboratoire spatial	Eureca (20)	Experiment/orbite	ESA (17)	à désigner (21)	
	Satellite	ECS (22)	Télécommunications Télédiffusion (23)	ESA/ (17) Eutelsat	BAe (GB) (24)	
	Satellite	Marecs	Télécommunications Télédiffusion (23)	ESA/Inmarsat (17) (25)	BAe (GB) (24)	
	Satellite	Intelsat V	Télécommunications Télédiffusion (23)	Intelsat	Ford (USA)	
	Satellite	Intelsat VI	Télécommunications Télédiffusion (23)	Intelsat	Hughes (USA)	
	Satellite	TDF-TV/SAT (26)	Télécommunications Télédiffusion (23)	France-RFA (27)	Eurosatellite	avec SNIAS/MBB/Thomson (28)
	Satellite	ERS-1	Obeerv. terre (14)	ESA/Eumetsat	Aerospatiale (Fr) (29)	
	Satellite	ISPM (30)	Scientifique	ESA (17)	Dornier-Systems (RFA)	
	Satellite	Exosat	Scientifique	ESA (17)	MBB (RFA) (31)	
	Satellite	Giotto	Scientifique	ESA (17)	BAe (GB) (24)	
	Satellite	Hipparcos	Scientifique	ESA (17)	Matra (Fr) (12)	
	Satellite	Space-Telescope	Scientifique	ESA/NASA	Dornier Systems (RFA)	

(32) C) EXTERIEURS
(Ne comportant pas d'intervention budgétaire française mais dans lesquels l'industrie française joue un rôle important)

Satellite	Arabsat	Télécommunications Télédiffusion (23)	(33) Ligue Arabe	(29) Aérospatiale (Fr)	
Satellite	Tele-X	Télécommunications Télédiffusion (23)	Suède (34)	Aérospatiale (Fr) (29)	

Key (to chart on facing page):

1. Civilian Programs.
2. Domestic.
3. Type of equipment.
4. Designation.
5. Function.
6. Client.
7. Prime contractor.
8. Remarks.
9. Launchers.
10. Space laboratory.
11. General Directorate for Telecommunications/ National Center for Space Studies.
12. Mechanics, Aviation and Traction Company.
13. Earth Observation Probe System.
14. Earth observation.
15. With Swedish and Belgian participation.
16. In Cooperation (France being a participating partner).
17. European Space Agency.
18. Industrial architect: National Industrial Aerospace Company.
19. Erno Raumfahrttechnik (Federal Republic of Germany).
20. European Retrievable Carrier.
21. To be designated.
22. European Communications System.
23. TV broadcasting.
24. [expansion unknown] (Great Britain).
25. European Space Agency/International Maritime Satellite Telecommunications Organization.
26. French TV Broadcast Company/[expansion unknown]
27. France-Federal Republic of Germany.
28. With (French) National Industrial Aerospace Company / (German) Messerschmitt-Balkow-Blohm / Thomson.
29. National Industrial Aerospace Company.
30. [expansion unknown].
31. Messerschmitt-Balkow-Blohm (Federal Republic of Germany).
32. Foreign (Not involving French budgetary participation but in which French industry plays a major role).
33. Arab League.
34. Sweden.

Experience shows that the leverages established among the industrial partners at the start of an activity change very little thereafter, regardless of the magnitude taken on by that activity. As compared with France's 18 percent, the FRG's share of the program's total budget is 45 percent: This cannot be other than disquieting for the future of French industry in this sector of space activity.

9399
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SOURCES OF FUNDS FOR NEW CABLE NETWORK OUTLINED

Paris L'USINE NOUVELLE in French 25 Nov 82 pp 79-81

[Article by Marion Valensi: "Cable Communication: Four Times the Telephone Market"]

[Excerpts] Fifteen million French households to be equipped in 15 years. For manufacturers of cables and distribution networks, this ambitious program represents a market of 45 billion francs and a cumulative total of 150,000 jobs (twice as many if you count civil engineering).

Between now and 1985, DGT (General Directorate for Telecommunications), the PTT ministry, local collectivities, the audiovisual production sector, and the cable industry, will have to put together a total of 12 billion francs in order to achieve the objective defined by the Council of Ministers at the beginning of November, which is to equip 1.4 million households in three years; the average cost is 8500 francs per connection, 60 percent of which will come from DGT. Starting in 1986, the latter hopes to reach a steady pace of one million connections per year, and reduce the average cost to 3000 francs (1982) per connection. "This cost," explains Alain Giraud, technical adviser to Louis Mexandeau, minister of PTT, "involves only the industrial portion of the orders; 20 percent of it results from the cables themselves, and 80 percent from the electronics associated with them." Added to this is the civil engineering cost of 600-1800 francs per connection, depending on housing density and the technology selected.

Local Collectivities: Primordial Role

In 1990, 20 million households will have television. If we exclude 5 million located in scattered housing areas, and customers who prefer direct reception antennas, we can depend on a potential market of 15 million connections. At 3000 francs per connection, this represents a market of 45 billion francs for the manufacturers of cables and of equipment for teledistribution networks, and a cumulative total of 150,000 jobs (an average of 10,000 per year, at a ratio of 100 connections per job). If we include civil engineering, we double the number of jobs and we add an average of 18 billion francs (40 percent) to this market, for a total of 63 billion francs.

To form an idea of the program's magnitude, we need only compare these figures to DGT's achievements in the telephone field for the last seven years. In 1974 there were only 6 million subscribers. The goal--which has been reached--was to satisfy each year an additional 2 million requests for telephone lines. Today, the 19 million subscriber mark has been exceeded. During the seven years, 13 million installations were performed, at an average cost of 1000 francs per subscriber; this is a market of 13 billion francs. The cable market is four times as large, and is spread over only twice as much time.

Two conditions have to be met for it to become a reality: the state's orders to industry must be motivated by an effective demand from local collectivities, and industry must be able to keep up with the pace of this demand. The role left to the initiative of local collectivities is a crucial one: it is a financial and above all, a decision-making role. The government's project is not included in the budget. The real market will depend on collectivities, which under these circumstances will have to create local commercial companies, associated perforce to TDF (Television de France). These companies will be responsible for 30 percent of the infrastructure financing, the study of potential local demand, the management of teledistribution services to subscribers, and the research and selection of service suppliers. Lastly, they will ensure the distribution of public service programs.

TDF's contribution will essentially be one of technical control at the head of the network (antennas, productions, and so on), where the programs are scheduled. PTT will be the network's prime contractor as owner of the infrastructure. The 200 million francs that are made available by the "launching of new services" program, will serve to assist, and even to underwrite, the first initiatives of the local companies.

For the time being, the only effective orders have been announced as part of the 1977 decree, which stipulated that the networks could be built only by TDF and with radio waves: the fiber optics network of Biarritz, or that of the urban community of Lille.

The other communities still have to follow this movement! But DGT is optimistic: PTT's studies show that for receiving satellite programs, 32 percent of the urban households prefer cable, against 18 percent for individual antennas, and 14 percent for collective antennas. In the United States, which is a leader in the field with 23 million subscribers during the last three years, 50-60 percent of the serviced households opted for connection.

French Companies are Technologically Ready

At present, the industrial production of telecommunications fiber optics is far from capable of satisfying the market that would be created by such a demand: 100,000-200,000 km of fibers per year would be needed at the beginning; FOI (Fibres Optiques Industrielles), a joint subsidiary of

Saint-Gobain Quartz et Silice and of Thomson, and producer of optical fibers for ground telecommunication, produces only 20,000 in its Conflans plants (55 persons). To define the strategy of its subsidiary, both in terms of investments and of technologic options, Thomson awaits the requests of local collectivities, and thus the selection of network architectures.

Cable Network: Services and Thousands of Jobs

On the French market of optical fibers, cables, and components, supply awaits demand. One can only hope that the latter will allow the formation of a few pilot networks between now and the 1985 launching of the first French-German satellite. According to PTT, the establishment of a cable network should reconcile the requirements for public service--the higher authorities collaborating with local companies in the control of programs--and those for decentralization--releasing frequencies that can be used by regional television. It is up to the fiber and the electronics industrialists to demontrate to the collectivities the services and the thousands of jobs that can be expected from a cable network, and that are promised by the 7 billion francs that PTT is by now ready to invest within the next three years.

Where do the 12 billion Come From?

Cable Network Development Program for 1983, 1984, 1985

Equipment plan	PTT responsibility: 6 billion (of which 1 billion in national investments and 5 billion for local networks) Responsibility of PTT partners (estimate): 1.5 billion (local collectivities)
Research and development effort	PTT responsibility: 0.8 billion Responsibility of PTT partners (estimate): 1.6 billion (industrial)
Launching of new services	PTT responsibility: 0.2 billion Responsibility of PTT partners (estimate): 1.8 billion (audiovisual production sector)
Total	PTT responsibility: 7 billion Responsibility of PTT partners (estimate): 4.9 billion

At first, this program will be superimposed on the telephone network program, which it will later encompass: through a single connection, cable subscribers will be able to receive both telephone and television services. Source: DGT.

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